



April 24, 2019

Testimony before the National Commission on Service Hearing on “Future Mobilization Needs of the Nation”

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Chairman Heck, Vice Chairs Ms. Wadra and Mr. Gearan, distinguished members of the Commission, thank you for the opportunity to discuss the future challenges for American mobilization.

In my remarks and written testimony, I first provide an assessment of the strategic challenge that the People’s Republic of China (PRC) presents as a great power rival.¹ I then discuss policy considerations for American military and national mobilization challenges, including questions involving the Selective Service System, in light of this challenge.

The PRC’s apparent prioritization of a whole-of-nation approach to national defense mobilization could indicate a serious concern with scenarios of large-scale and/or protracted warfare. In a future conflict, the United States might be situated in a position of disadvantage as a result of lesser capability for rapid mobilization of military and industrial resources, relative to a potential adversary that could undertake a much more extensive national defense mobilization at greater speed and scale.

The United States must undertake a significant reevaluation of the demands of our national mobilization for future contingencies that could involve confrontation with one, perhaps even two, great power rivals. In the process, the U.S. military and government can build upon and learn from the history of our past experiences in defense and industrial mobilization, while adapting to today’s unique demands of talent and technology. Looking to the challenges of strategic competition, the United States must recognize that diversity and inclusion are critical strengths that we must embrace in order to fully leverage the talents of all Americans who aspire and are inspired to serve.

The Challenge of Chinese Military Modernization

The “China Dream” of “national rejuvenation” requires a powerful military capable of defending “core interests” of sovereignty, security, and development that are increasingly global in scope and scale.² Currently, the PLA is undertaking historic reforms to increase its capability to “fight and win” wars. Since late 2015, pursuant to these reforms, the PLA has created a new command structure for joint operations under the Central Military Commission, creating five new theater commands (战区) that will be responsible for future military operations. Not unlike the U.S. military’s reforms with

Bold.

Innovative.

Bipartisan.

Goldwater-Nichols, the PLA today is seeking to transition towards greater jointness in command and operations.³ The PLA Army's traditional dominance has been attenuated, including pursuant to significant downsizing, as the PLA Navy has started to emerge as a true blue water navy with global ambitions, and the PLA Air Force has embraced being a "strategic" service,⁴ including the development of a new nuclear bomber, while PLA Rocket Force has been elevated as a core force for strategic deterrence and war-fighting.⁵ These structural changes are also intended to facilitate the PLA's rapid transition from peacetime to wartime posture, through combining and integrating structures and command organizations (i.e., the concept, 平战结合).⁶ Consistently, the PLA has also highlighted the importance of building up new-type forces and new concept weapons, including increased employment of unmanned systems across all domains of warfare.⁷ In his remarks at its military work conference in January 2019, Xi Jinping emphasized the importance of 'deepening planning for warfare and operations in order to ensure quick and effective responses once a matter is happening,' while improving the quality of military training and preparations.⁸

In the course of these reforms, the establishment of the PLA Strategic Support Force (PLASSSF) in late 2015 has consolidated and is advancing China's space, cyber, and electronic warfare capabilities.⁹ The PLASSSF would provide "information support" to enable joint operations, including intelligence and enabling targeting. In the process, the Strategic Support Force would serve as the 'tip of the spear' for information operations, including psychological operations, and could strike the first blow in any future conflict.¹⁰ The PLA recognizes space and cyberspace as new "commanding heights" (制高点) of today's strategic competition.¹¹ Fighting a powerful potential adversary, the PLASSSF might go on the offensive, actively undertaking first strikes targeting an enemy's 'system of systems' in order to achieve an operational advantage.¹² Although the PLASSSF remains a force under construction, its structure is taking shape through the creation series of bases organized regionally that support the PLA's theater commands (i.e., eastern, southern, western, northern and central bases),¹³ along with its Information and Communications Base (信息通信基地), among others.¹⁴ Of these, the PLASSSF's Base 311 or 'Three Warfares Base' would be responsible for political work/warfare and psychological operations,¹⁵ primarily targeting Taiwan to date.¹⁶ The PLASSSF is actively recruiting talent with technical proficiency, including civilian personnel for positions that include research in "aerospace artificial intelligence," while also expanding its educational programming in big data and artificial intelligence via its Information Engineering University.¹⁷

Xi Jinping has called for the PLA to become a "global-first class" or "world-class" (世界一流军队) military by mid-century, perhaps equaling or surpassing the U.S. in the process.¹⁸ Increasingly, the PLA is called upon to undertake "new historic missions" that are starting to involve defending overseas interests that are increasingly global in scope and scale,¹⁹ pursuant to the One Belt, One Road initiative.²⁰ In this regard, "internationalization" is seen as a new direction for China's military power.²¹ With the establishment of its first base in Djibouti, the PLA appears to be on track to become a force that is more globally expeditionary,²² with perhaps more bases to follow in the years come.²³ The PLA has also established at least an initial presence in Tajikistan, in what may be the precursor to a base, evidently motivated by concerns of border security and counterterrorism.²⁴ For the PLA, future global basing could include presence in Pakistan, and extensive Chinese military diplomacy may set the stage for future bases and/or further informal agreements involving access for purposes of logistics support.²⁵ As the PLA Navy approaches its 70th anniversary, Chinese military media is highlighting its advances and potential to support global peace.²⁶

China is determined to emerge as a global leader in innovation, seeking to surpass the U.S. we ‘turn the corner’ (弯道超车) of today’s industrial and technological revolutions.²⁷ The PLA believes that a Revolution in Military Affairs (RMA) is currently underway that is changing the character of conflict from informatized (信息化) to intelligentized (智能化) warfare.²⁸ In particular, the PLA is prioritizing military innovation and has recognized artificial intelligence as a strategic technology that could change the form of future warfare. The PLA is actively investing in a range of applications of artificial intelligence, from early warning to greater autonomy in advanced weapons systems, including hypersonic glide vehicles.²⁹ Notably, the PLA’s Academy of Military Science has established a new National Defense Science and Technology Innovation Research Institute (国防科技创新研究院),³⁰ which encompasses an Artificial Intelligence Research Center, Unmanned Systems Research Center, and Frontier Cross-Domain Technology Research Center, already involving hundreds of researchers and actively recruiting new personnel.³¹ PLA strategists are also exploring new concepts and mechanisms for victory in future intelligentized operations, including to concentrate on options for human-machine cooperation.³²

While avidly concentrating on technological innovation as an enabler of future military power, the PLA has continued to emphasize improving the quality of its officers and enlisted personnel, while enhancing the realism of their training. In this regard, the PLA is operating on the maxim, “A first-class army is composed of first-class soldiers.”³³ Traditionally, the PLA has confronted major shortcomings in talent and human capital,³⁴ but the ongoing reforms have continued to emphasize recruiting more educated and technically proficient personnel, particularly college students. As of spring 2019, over 2,500 colleges and universities nationwide have established recruitment workstation.³⁵ At the same time, Chinese military recruitment continues to confront a number of challenges, including health issues that have necessitated changes to physical standards, along with competition with the tech sector for talent.³⁶ China’s continued attempts to create a more integrated ecosystem for talent development in high-tech fields have included a range of academic cooperation and research partnerships, including those that the PLA Strategic Support Force has established with civilian universities and the defense industry.³⁷ Counterproductively, in some cases, the PLA appears to limit itself through evidently restricting the opportunities available to China’s ethnic minorities, while also only leveraging women in the military to a limited degree. For instance, there have been explicit restrictions in place, often quite sexist in nature, that have tended to constrain women’s participation traditionally, despite some high-profile exceptions.³⁸ Nonetheless, this sustained investment in human capital is overall starting to yield some notable dividends,³⁹ and the PLA may be starting to gain on the U.S. military in terms of the level of education and quality of training of its officers and enlisted personnel.

As U.S.-China strategic competition intensifies, although long-term peacetime competition may be the most likely scenario, there is a non-zero possibility of conflict. In particular, potential contingencies involving Taiwan pose perhaps the most direct risk of outright warfare. In a notable speech in 2019, Xi Jinping declared, “Achieving the motherland’s complete unification is an unshakeable historical mission.”⁴⁰ The PLA may not yet be capable of an outright invasion of Taiwan by some assessments.⁴¹ Nor would the use of force be the preferred option for Beijing, relative to alternatives for potential economic coercion and political interference. Nonetheless, the risk that a conflict could occur, over Taiwan or involving active territorial disputes in the East and South China Seas, should not be dismissed, particularly considering the potential for miscalculation or inadvertent escalation. Moreover, uncertainty or ambiguity about whether the U.S. military would possess the resolve and dedication to defend Taiwan could exacerbate the risks of such a

miscalculation on the part of Beijing. For instance, if the U.S. were believed to be incapable of rapidly mobilizing or sustaining popular support for a costly conflict, that perception could influence Chinese leaders' calculus. Going forward, reinforcing deterrence and demonstrating the credibility of U.S. commitments in Asia is vital to the future of strategic stability in the Indo-Pacific and beyond.

China's Plans and Policies for National Defense Mobilization

The Chinese government has created a framework for national defense mobilization that is uniquely far-reaching and comprehensive. Chinese leaders and strategists see national defense mobilization (国防动员) is seen as critical to safeguarding national security, recognizing its importance in transforming the national defense potential into the strength for warfare in ways that contribute to deterrence. In particular, Xi Jinping has personally highlighted, "Even if a big war occurs, we have a complete national defense mobilization system, and we have this important magic weapon of people's warfare, which can be rapidly mobilized."⁴² In practice, China's basic concept of national defense mobilization is quite expansive, including economic, political, information, transportation, and technological mobilization, among other elements,⁴³ and intended to be implemented through a whole-of-nation approach with high-level leadership and coordination.* As of 1994, China initially approved its National Defense Mobilization Law,⁴⁴ which was revised and reintroduced as of 2010. In Article 4 of this law, this law highlighted the importance of a highly integrated paradigm for mobilization:

"National defense mobilization shall stick to the policies of combining civil with military, combining peacetime production with wartime production and embedding military in civilian, and following the principles of unified leadership, participation by the entire people, long-term preparation, with emphasis on the construction of key projects, overall consideration, orderliness and high efficiency."⁴⁵

The National Defense Mobilization Commission (国家国防动员委员会) was initially established in 1994 to coordinate the mobilization of national defense mobilization under the leadership of the State Council and Central Military Commission.⁴⁶ This national commission's primary responsibilities involve preparing and implementing plans for national defense mobilization, while also coordinating major mobilization initiatives across military, economic, and social domains. The Commission is authorized to organize and undertake leadership of mobilization of not only armed forces but also national economic mobilization, as well as civil air defense, transportation readiness, and national defense education, among other tasks.⁴⁷ For localities, this top-level leadership is extended and augmented by a parallel structure of provincial and even district, county, and/or municipal national defense mobilization commissions.[†] Evidently, China has established and is continuing to develop an extensive architecture to facilitate the work and process of mobilization across peacetime preparations and in anticipation of the intense demands of wartime mobilization.⁴⁸

* China's framework for national defense mobilization is further delineated and bolstered through a series of laws, which include: the Reserve Officers Law (1995), the People's Air Defense Law (1996), the National Defense Law (1997), and the National Defense Education Law (2001), among others. These are all also relevant and worthy of further consideration, but a more detailed discussion of each goes beyond the scope of this testimony.

† Specifically, according to Article 12 of the National Defense Mobilization Law: "The national defense mobilization councils in the military area/district and the local national defense mobilization councils at or above the county level shall organize, direct and coordinate the national defense mobilization work within their respective regions."

The continued attention to improving this system indicates that Chinese leaders may be seriously concerned with and considering scenarios in which rapid, large-scale mobilization would be imperative.⁴⁹ Of course, planning and potential capability should not be considered indicative of intent, but these activities merit close examination and critical consideration nonetheless. In 2015, the national defense white paper on “China’s Military Strategy” called for “improving the systems and mechanisms of national defense mobilization,” declaring:

“China will enhance education in national defense and boost the awareness of the general public in relation to national defense. It will continue to strengthen the building of the reserve force, optimize its structure, and increase its proportion in the PLAN, PLAAF and PLASAF, as well as in combat support forces. The ways to organize and employ reserve forces will be more diversified. China will devote more efforts to science and technology in national defense mobilization, be more readily prepared for the requisition of information resources and build specialized support forces. China aims to build a national defense mobilization system that can meet the requirements of winning informationized wars and responding to both emergencies and wars.”⁵⁰

Pursuant to the recent military reforms starting in late 2015, the former General Staff Department Mobilization Department has been replaced with and elevated to become Central Military Commission National Defense Mobilization Department (军委国防动员部). Notably, this National Defense Mobilization Department has taken on oversight over the PLA’s reserve forces and militias, as well as provincial military commands (also known as military districts),⁵¹ over which the former military regions (now restructured as the five theater commands) had prior oversight.⁵² This greater centralization of authorities could be intended to streamline the process of national defense mobilization more directly under the leadership of the Central Military Commission. China’s system of provincial military districts (省军区系统),⁵³ each of which consists typically of an office and bureaus for political work, war preparedness, national defense mobilization, and support, plays a vital role in the process of national defense mobilization.⁵⁴ In practice, these functions require close coordination between the military and local Party and government departments.

The continued reshaping of this extensive architecture for national defense mobilization remains underway, aiming for significant improvements by the end of the 13th Five-Year Plan in 2020. Speaking in the spring of 2017, Major General Sheng Bin (盛斌), who is currently director of the CMC National Mobilization Department, had declared, “By the end of 2020, [we will have] basically constructed a system of laws and regulations for national defense mobilization regulation that is scientifically complete, practically effective, and compatible, providing a solid and powerful legal assurance for the construction and development of national defense mobilization under the new situation.”⁵⁵ In particular, ongoing efforts to develop laws and regulations, such as the National Defense Transportation Law (国防交通法), adopted in 2016, are intended to structure and support the process of national defense mobilization in a manner that coordinates across sectors.⁵⁶ For instance, the National Defense Transportation Law, which applies to roads, railways, aviation, pipelines, etc., highlights in Article 3:

“The state adheres to the strategy of integrated military-civilian developments; promotes the optimal allocation and rational sharing of military and local resources; improves the capability of peacetime defense services, emergency response, and wartime confrontation of an enemy’s attack; and promotes coordinated development of economic construction and

national defense construction. The work of national defense transportation follows the principles of unified leadership, hierarchical responsibility, overall planning, and combining peace and wartime [activities].”⁵⁷

Indeed, China’s approach to national defense mobilization should be recognized as consistent with Chinese leaders’ priority of balancing and creating synergies among economic development and military modernization. During his remarks for the 19th Party Congress’ work report in the fall of 2017, Xi Jinping emphasized:

“We should ensure that efforts to make our country prosperous and efforts to make our military strong go hand in hand. We will strengthen unified leadership, top-level design, reform, and innovation. We will speed up implementation of major projects, deepen reform of defense-related science, technology, and industry, achieve greater military-civilian integration, and build integrated national strategies and strategic capabilities. We will improve our national defense mobilization system, and build a strong, well-structured, and modern border defense, coastal defense, and air defense.”⁵⁸

Of course, it is difficult to anticipate how this extensive architecture for national mobilization would perform in actuality, since China has not had occasion to engage in full mobilization for war in recent history.⁵⁹ However, there are regular activities at the local level that indicate active and ongoing engagement with the challenges of this process.

In furtherance of this agenda, China is concurrently implementing a national strategy for military-civil fusion (or “civil-military integration,” 军民融合).⁶⁰ This concept encompasses not only a more integrated approach to technological development, but is also applied to priorities that include talent, logistics, and mobilization. Since 2015, Xi Jinping has taken personal responsibility for the implementation of this agenda through the National Military-Civil Fusion Development Commission (国家军民融合发展委员会).⁶¹ Increasingly, China is pursuing a strategy centered upon innovation to advance its economic and military development alike. As Xi Jinping has urged in spring 2018 remarks to a PLA delegation:

“It is necessary to strengthen national defense science and technology innovation, speed up the construction of a military-civilian fusion innovation system, vigorously improve the indigenous innovation capabilities of national defense science and technology, increase the dynamics of transformation and application of advanced scientific and technological achievements, and promote the transformation of our military construction towards being quality-efficient and science and technology-intensive.”⁶²

This increased concentration on the importance of science, technology, and innovation in mobilization is starting to be displayed in a series of partnerships that evidently demonstrate military-civil fusion in action. Potentially, China could leverage civilian infrastructure and commercial capabilities—perhaps to a greater degree than the United States—to support military operations. In late 2017, the PLA Air Force Logistics introduced major partnerships with logistics

‡ Please note that translations and interpretations of this term and concept tend to vary, and confusion can abound. I choose to use the phrase “military-civil fusion” in my own writing and analysis, but the same term can also be translated as civil-military integration, or in the phrase “integrated military and civilian development.”

companies, including Jingdong (JD), SF Express, and China Railway Express,⁶³ known for their respective strengths in logistics, including increasing employment of commercial drones.⁶⁴ For instance, the PLA Air Force undertook initial trials of using drones from these rapid delivery companies to deliver supplies troops in the field in January 2018.⁶⁵ In May 2018, the PLA established its first reserve unit to use civilian UAVs, located in Shaanxi and in cooperation with JD, which is intended to leverage these systems for such functions as reconnaissance and even potentially counterterrorism.⁶⁶ Notably, in the fall of 2018, a number of local companies provided logistics support to the PLA in joint exercises through facilitating transportation and enabling recovery after a simulated air attack on an airbase.⁶⁷ The continued improvement of such collaborations could provide the PLA with an important resource that could be mobilized in times of actual conflict.

The legacy of Mao Zedong's paradigm of "people's warfare" (人民战争) lives on in China today. Even as warfare is transformed by rapid advances in technology, Chinese military strategy remains committed to adapting this concept, urging:

"Give full play to the overall power of the concept of people's war, persist in employing it as an magic weapon (法宝) to triumph over the enemy, enrich the contents, ways and means of the concept of people's war, and press forward with the shift of the focus of war mobilization from human resources to science and technology..."⁶⁸

Contemporarily, this extends to a mentality that national defense is a matter of collective responsibility in which everyone must be mobilized to participate, in what might be characterized as a whole-of-society approach.⁶⁹ Also in his remarks at the 19th Party Congress, Xi Jinping declared:

"Our military is the people's military, and our national defense is the responsibility of every one of us. We must raise public awareness about the importance of national defense and strengthen unity between the government and the military and between the people and the military."⁷⁰

In any future conflict scenario, the Central Military Commission could rapidly mobilize reserve forces, as well as a variety of militias through the National Mobilization Department, in coordination with the PLA's services and theater commands. The PLA has reserve units that could contribute to combat, logistics and equipment support, including those trained for specialized functions such as electromagnetic spectrum management.⁷¹ Since the reforms, reportedly, the PLA Army's reserve forces have been streamlined, and those of the Navy, Air Force, Rocket Army, and Strategic Support Force reserve forces have grown.⁷² For the PLA, the militia (民兵) is an "armed organization" that is intended to serve as "an assistant and reserve force,"⁷³ including through "combat readiness support and defensive operations."⁷⁴ The militia, involving primary and general categories of forces, can support emergency response detachments, including joint air defense, intelligence, reconnaissance, and communications support, engineering rush-repair, transportation and equipment repair. PLA militias might support missions that include cyber defense and psychological operations.^{§, 75}

[§] Discussing the dynamics of military struggle in the cyber domain, *The Science of Military Strategy*, an textbook produced by the Academy of Military Science that is considered authoritative, included the statement: "since the boundaries between peacetime and wartime are ambiguous, and military and civilian attacks are hard to distinguish, persist in the integration of peace and war [and] in military-civil integration; in peacetime, civilians hide the military, while in wartime, the military and the people, hands joined, attack together..." [See: Academy of Military Science *Military Strategy*

Infamously, China's "maritime militias," or 'little blue men,' have contributed to naval activities and operations in the East and South China Seas, often seemingly supporting and directly coordinating with the PLA Navy and Coast Guard in the process.⁷⁶ In a conflict scenario, the maritime militias might be used for combat and logistics support as well.

Since the 2015 reforms, there is some evidence that China's militias are more actively and regularly training with the PLA's services and theater commands.⁷⁷ As the PLA shifts its focus to new-type forces, the development of militias has also looked to leverage local high-tech industries to contribute to force construction. For instance, Shanghai initially established a UAV militia unit (分队) as early as 2015, primarily for purposes of reconnaissance.⁷⁸ In a similar attempt to enable national defense mobilization to keep pace with rapid innovation, Shanghai has established the National Defense Mobilization Alliance, which involves over 30 high-tech enterprises that are intended to continue in the city's apparent tradition of experimenting with new techniques for mobilizing science and technology.⁷⁹ Going forward, future militia and reserve forces construction could emphasize new efforts to incorporate "talents from new professions related to wartime requirements," including e-sports-persons and artificial intelligence engineering technicians to provide "technical support and talent guarantee" for winning future warfare.⁸⁰

Consistently, the People's Republic of China has concentrated on national defense education (国防教育) as an important element of these overall efforts for national defense mobilization. There estimated to be nearly 3,000 colleges and universities in China, as well as over 22,000 high schools,⁸¹ that annually organize students to undertake military training.⁸² For instance, as of the fall of 2018, 5.95 million college students from 2,898 colleges and universities were required to complete about two weeks of military training prior to starting the academic year.⁸³ Their activities include physical training and theoretical teachings.⁸⁴ These requirements were implemented after the Tiananmen incident, constituting an element of the Party-state's subsequent attempts to inculcate greater nationalism, along with initiatives for "patriotic education."⁸⁵ Often, the programs provoke some controversy, because of medical incidents⁸⁶—and even fatalities—that have arisen during the program, and especially since the program was extended to students arriving at mainland Chinese universities from Hong Kong and Macau.⁸⁷ The PLA continues to see national defense education and the process of training students as an important component of the overall national defense mobilization system, and this program may only redouble in the years to come, including with recent revisions to a curriculum for military education to be implemented across Chinese universities.⁸⁸

Looking forward, the PLA is interested in innovating in its techniques for national defense mobilization, considering the demands of accuracy and timeliness anticipated. In particular, China's smart cities are reportedly intended to be designed in a manner that could facilitate national defense mobilization.⁸⁹ Since at least 2012, defense mobilization systems at the provincial and municipal levels have started to explore options for a 'smart' model for mobilization enabled by such smart city projects.⁹⁰ Considering the improved planning, scheduling, and distribution of resources that big data analytics and artificial intelligence technologies can enable, this could be an important application in supporting combat capabilities. Indeed, PLA planners also appear to be greatly interested in the potential employment of artificial intelligence to enhance its capabilities for rapid and precise mobilization, including to manage the complexities of the process.⁹¹

Research Department [军事科学院军事战略研究部] (eds.), *The Science of Military Strategy* [战略学]. Military Science Press [军事科学出版社], 2013, p. 131.]

Challenges and Requirements for American Mobilization

Looking forward, the United States should reckon with the troubling possibility of conflict contingencies that might involve one, or perhaps two, great power rivals that could command formidable military and industrial capabilities. The PLA has closely studied and diagnosed weaknesses in American war-fighting ever since the first Gulf War, developing concepts of operations and capabilities that seek to exploit our vulnerabilities.⁹² Any future war could start with surprise attacks against U.S. battle networks, satellites, and logistics support, with the intent of undermining U.S. command and control, and power projection. The U.S. homeland is unlikely to be spared attacks on critical infrastructure, which could cause major damage and disruption in ways that may also undermine overall morale. Moreover, U.S. supply chains and the cyber security of American weapons systems could constitute a vector of vulnerability. In some respects, the current levels of entanglement or interdependence between the U.S. and Chinese economies and innovation ecosystem could be exploited or weaponized. Concurrently, the PLA's agenda for military innovation is motivated by ambitions of leapfrogging ahead of the U.S. military in a new era of warfare. The Chinese military may also have the advantage of mass, from a sizable navy that is rapidly growing, to the capability to produce large numbers of cheap, attritable platforms, such as drones. Meanwhile, the relative atrophy of certain American industrial and manufacturing capabilities also could present a major difficulty.⁹³ Arguably, China's competitive strategy has succeeded in a manner that could place the U.S. military in a position of operational disadvantage.⁹⁴

In recent history, the United States has tended to assume military-technological superiority, hoping to maintain overmatch relative to any potential adversary in a manner that may be no longer feasible, without the major concerns of competitive mobilization that may be salient today. Whereas in World War II, the United States had the luxury of time, speed in mobilization may be of the essence in any future great power conflict. The United States may not have the months, even years, of leeway to adapt and transition from a peacetime to a wartime posture, as in the past and in recent conflicts.⁹⁵ Moreover, there are major asymmetries in the attention that the U.S. and Chinese militaries and governments have respectively dedicated to contingencies involving large-scale mobilization. In any future conflict scenario, China would likely be operating within close proximity to its homeland, able to draw upon full military and industrial resources almost immediately, whereas the U.S. military would confront the greater challenge of projecting power and sustaining resources at much greater distances. In the process, the supporting infrastructures that would enable logistics and large-scale transportation, particularly TRANSCOM, are inherently vulnerable to interference.⁹⁶ Although prevailing opinion in the United States has tended towards the assumption that the return of the draft is highly unlikely, it is possible to imagine and important to consider contingencies in which use of Selective Service System, in a manner that is consistent with the particular requirements of 21st-century conflict, could be a critical factor.

Prior to and during any future conflict, the beliefs and support of the American people should be considered a center of gravity—and likely target of attempted subversion. The Chinese Communist Party has been engaged in ongoing ‘united front work activities,’ and the wartime psychological operations that might be undertaken by the CCP and PLA could intensify and leverage existing influence on media platforms and to influential individuals.⁹⁷ Chinese leaders would prefer success through deterrence or coercion, ideally aiming to ‘win without fighting,’ including through incremental advancement of strategic objectives. In the future, the PLA might experiment with new

techniques to leverage big data and artificial intelligence in order to enhance propaganda and psychological operations, from deep fakes to improved precision in attempting to undermine an enemy's will to fight. As recent events have unfortunately demonstrated, American society and our democratic institutions can prove highly vulnerable to disruption of this variety. In this regard, the question of national mobilization must also take into account these concerns of morale and social resilience.

Policy Considerations and Recommendations

Although my expertise and professional experience pertain primarily to the Chinese military and defense technological developments, I want to raise and highlight for the Commission's attention certain issues of concern and policy considerations that I believe are important to consider in ongoing debates on the future of service and American mobilization.

Future Requirements and Challenges for National Mobilization:

The ideas that I include are intended to reflect a range of options that might be relevant to the Commission's mandate and could contribute to a more expansive reevaluation of the needs of national mobilization in an era of great power rivalry.

- *Prepare for scenarios of great power conflict in U.S. plans and policies for mobilization.* U.S. planning and formulation of requirements for mobilization cannot assume scenarios of limited, regional warfare but rather must evaluate the full risks of scenarios that could protracted fighting against one, or even two, great powers. The deepening alignment and military-to-military cooperation between the China and Russia should be taken into account in planning and war-gaming. Nor should the U.S. military assume that technological superiority can be sustained in future scenarios, considering China's advances and ambitions to become a science and technology superpower (科技强国).
- *Consider organizing annual exercises to test and demonstrate the U.S. capability to rapidly redeploy forces from multiple theaters to the Asia-Pacific and/or Europe for a scenario of great power conflict.* The legacy of Exercise Campaign REFORGER provides a powerful paradigm that may be revived and reconsidered,⁹⁸ in order to enable evaluation and demonstration of the U.S. military's capability to fulfill the logistics and transportation requirements of potential campaigns involving sizable deployment to confront great power rivals today.⁹⁹ Potentially, the U.S. military might invite allies and partners from NATO and from the Indo-Pacific to contribute to an exercise of such scope and scale on an annual or biannual basis, potentially alternating yearly between exercises under the leadership of U.S. European Command (EUCOM) and Indo-Pacific Command (INDOPACOM). This modern-day revival of REFORGER for the Indo-Pacific theater, perhaps to be named "Pacific Shield," also could provide a compelling demonstration to strategic competitors of U.S. capability to mobilize and deploy for relevant scenarios in ways that may reinforce deterrence, while also revealing and allowing for the mitigation of any potential shortcomings in logistics and transport that could identified in the process. In the process, these exercises also could improve interoperability with allies and partners in Europe and throughout the Indo-Pacific.¹⁰⁰

- *Formulate a comprehensive framework to undertake economic and industrial mobilization at home in a scenario of high-end and/or protracted conflict.* The Department of Defense should undertake a study and/or independent assessment of the requirements of economic and industrial mobilization for scenarios of high-end conflict with a great power rival. Potentially, such a study could evaluate the potential establishment of a national board or commission for mobilization that might involve multiple elements of government, as well as relevant industry stakeholders, to take on the authority and responsibility for the tasks and planning required, perhaps a modern-day equivalent of the Office of Production Management. At present, the United States does not possess a cohesive strategy for whole-of-nation mobilization, nor is it clear for mobilization of this nature would be structured or undertaken effectively without a high-level organization that has a clear mandate for such an undertaking. This lack of an institutional mechanism to undertake industrial and technological mobilization could undermine the U.S. capability to do so at the speed and scale of relevance.¹⁰¹ At present, there could be major structural asymmetries between American mobilization relative to that of great power rivals, namely the People's Republic of China, that have extensive frameworks for leadership and planning of multiple dimensions of national defense mobilization. In the process, there may be critical lessons to be learned from the history of U.S. industrial mobilization during World War II, including the key role that American industry played at that time that might inform this endeavor.¹⁰²
- *Include women in the Selective Service System, and continue to explore options for its adaptation to the demands of future warfare.* The character of warfare is changing. In future conflict, virtual domains, from space to the cyber domain and the spectrum, may have a decisive influence on the outcome of operations. Whereas physical capabilities have been considered traditionally a *sine qua non* for full participation in military service, the skills and technical proficiency required in the future, such as for cyber operations or data fusion to enable enhanced intelligence, will be just as critical. Women are equally capable of contributing to these missions. Indeed, considering that the needs of future mobilization will not only as much cognitive as physical, certain of the current justifications for excluding women from this duty of citizenship will become increasingly irrelevant. Of course, there is also the question of equality and Constitutionality that also argue for this shift to full inclusion.¹⁰³ Looking forward, for the Selective Service System to adapt to the needs of 21st-century mobilization will also require reconceptualizing its role from primarily supporting and providing infantry to augmenting military personnel across a range of missions and skillsets, including those that require more technical, rather than primarily physical, attributes.
- *Rethink and adjust the Selective Service System to ensure speed, resilience, and adaptability to future requirements.* The future relevance of the Selective Service System will depend upon its capability to adapt to the needs of modern mobilization, including to continue functioning efficiently under circumstances in which the U.S. homeland could be targeted. Potentially, reforms to the Selective Service System could include requiring those who register to complete a profile in which they delineate relevant skillsets and professional experience (e.g., language, technical proficiency, occupation). This new addition to the process could also include a voluntary alternative for registrants to choose a status of 'front-line service' within the system, which could constitute in a separate listing of those who could be among the first to mobilize in a contingency, as an alternative to a lottery for the draft. Those who choose to participate in this first-tier of selective service could complete a one-time or an annual training and exercise, plus optional educational programming. This slight modification to the Selective Service System

would provide a minimal and feasible commitment for those who are not able to commit to the more regular requirements of service in the Reserves or National Guard, but who would choose to be among the first to serve if called upon to do so.

- *Prepare for defense, resilience, and continuity of operations in the face of likely cyber attacks against U.S. critical infrastructure, and examine new models for voluntary programs that can enable flexible societal engagement in support of national defense.* In any future conflict scenario, potential adversaries, including the Chinese military, that could target the U.S. power grid, communications, and financial institutions, among other elements of American critical infrastructure. The U.S. should evaluate the risk that such attacks could present to mobilization and to sustaining public support for operations. Our policy responses must be commensurate with the gravity of these threats, including perhaps new options to leverage reserves and national guard units for rapid response to cyber threats and to augment the Cyber National Mission Force in crisis and conflict scenarios. In addition, the U.S. military may be able to learn important lessons from how other nations have employed creative solutions to leverage the talent and expertise of average citizens in support of national defense, particularly cyber defense. For instance, Estonia's Cyber Defense Unit provides a notable paradigm of a volunteer system that is highly flexible and provides opportunities for societal involvement.¹⁰⁴ These cyber defense units could operate on an ongoing or conditional basis under the authorities of each state's National Guard, based on one promising proposal.¹⁰⁵ Such an option may be designed to incorporate a level of optionality to appeal to those unwilling to commit to formally joining the Reserves or National Guard, while allowing for more effective mobilization and coordination of voluntary initiatives in a moment of crisis or conflict.
- *Update and reform or expand, where necessary, existing policies and legislation that allow the U.S. to leverage industrial and commercial resources in support of mobilization, including through seeking to reinvigorate the Merchant Marine.* The United States does have a preexisting framework of legislation and partnerships with commercial contributors that have been and could be leveraged in a time of crisis or conflict. However, core components of this architecture, such as the Civil Reserve Air Fleet, and the Jones Act, which covers maritime shipping, could be updated, reformed, and reinforced where appropriate in anticipation of contemporary challenges.¹⁰⁶ For instance, there are reasons for serious concern that the Merchant Marine has declined precipitously in numbers and capability to an extent that could undermine U.S. capacity to mobilize for and supply forces in future conflicts.¹⁰⁷ While exploring options to expand and revitalize the Merchant Marine, the U.S. Navy and Maritime Administration also should explore options for increased employment of unmanned and autonomous systems in support of sealift to facilitate future logistics and mobilization.
- *Prioritize the challenge of sustaining global logistics and transportation despite risks to networks that enable those vital functions for power projection.* In any conflict, U.S. Transportation Command (TRANSCOM) would likely be a target of potential adversaries, and there are already a number of incidents in which TRANSCOM has been hacked, apparently by the Chinese military.¹⁰⁸ The U.S. military must continue to prioritize hardening and redundancy of these systems with the aim of enabling continuity of operations in the face of likely attacks. In the process, the U.S. military might also explore options to improve further the leveraging of capabilities and partnerships with contractors and commercial enterprises, while looking mitigate their potential vulnerability to disruption or exploitation.

- *Explore options to deepen public-private partnerships to facilitate new directions in technological mobilization.* Increasingly, the critical technological capabilities that might provide a key edge to the U.S. in a future conflict scenario are commanded by technology companies that have varying and complex relationships with the U.S. national security establishment. To facilitate closer partnership, the Department of Defense might create a modern-day “National Defense Advisory Commission” to which industry stakeholders, including those representing emerging sectors, would be invited to participate that could convene periodically to discuss planning for potential contingencies, including natural disasters, requiring emergency responses and/or national mobilization. Congress might explore new options and legislation through which to create formal channels for reinforcing such partnerships in anticipation of concerning contingencies.
- *Improve leveraging of big data and improved information sharing in support of mobilization.* The process of undertaking national mobilization will inherently involve incredible complexity in the planning, management, and coordination of human and industrial resources at scale. The collection of data that comprehensively characterizes the resources available for mobilization (e.g., ranging from logistics support to equipment to personnel with high-priority skillsets), along with the integrity and confidentiality of that data, should be considered important elements of the process of national mobilization. The Department of Defense could explore options to apply artificial intelligence to evaluate and optimize defense mobilization.
- *Evaluate and prioritize mitigation of vulnerabilities in supply chains that could otherwise compromise complex weapons systems.* The supply chains that sustain U.S. military and industrial capabilities present a potential source of acute vulnerability. At worst, vulnerabilities, whether introduced deliberately or inadvertently, could be exploited by a potential adversary in a conflict scenario for purposes of damage or disruption. The continuation and implementation of current efforts to improve visibility over and security of supply chains should be a core priority and recognized as an important consideration in national mobilization. For instance, building upon current and ongoing initiatives, the Department of Defense might conduct a study of ways in which current supply chains, including access to overseas capabilities and resources integral to the fabrication of American microelectronics,** could be disrupted or interrupted in a scenario of great power conflict.¹⁰⁹ The Department of Defense should continue to explore options for the rebalancing and diversification of supply chains, in order to lessen dependence on vendors and sources that could be rendered inaccessible or compromised in potential conflict scenarios.¹¹⁰

Mobilizing Talent for the Future Force:

Beyond questions of inspiration, the future of national service and mobilization depends upon policy changes that could increase the U.S. capability to recruit and retain talent with critical skillsets. Although potential reforms to the Selective Service System are important to consider, there are a range of pragmatic measures that will also merit evaluation. At the same time, the United States must recognize that one of our core comparative advantages relative to strategic competitors

** Insofar as Taiwan is a critical center of semiconductor manufacturing, any conflict scenario involving Taiwan could disrupt U.S. access to these capabilities.

involves our openness to welcoming and embracing those who love this country and are dedicated to its future.

- *Recognize that our diversity and inclusion are and should remain among our greatest strengths as a nation.* The U.S. military can draw upon a more limited population than China, and an even smaller proportion of Americans are currently qualified and inclined to serve. The U.S. military and national security community as a whole must recognize the strategic importance of a sustained dedication to diversity and inclusion as core values, and for the pragmatic purpose of fully leveraging all available talent. The strengths and creativity of diverse teams also provide a compelling rationale for the United States to recognize inclusion as critical competitive advantage in service and as a nation.¹¹¹
- *Prioritize improvements in policies for personnel management that aim to retain and better leverage talent to fulfill the needs of the future force.* The U.S. military should concentrate on exploring new options to leverage and empower talent, including new options for career trajectories that enable specialization and greater flexibility, that can contribute to retaining talent.¹¹² Although the policies that should be considered in this context merit much more detailed discussion—building upon past and ongoing initiatives—some of the changes should be highlighted include the following:
 - *Evaluate the option of creating new occupational specialties to fulfill emerging requirements.* Considering the deep technical expertise required for certain positions, the U.S. military might create new opportunities for career trajectories that allow for greater specialization, perhaps recoding new and/or existing specialties along the lines of a warrant office track to allow for long-term development of expertise in priority fields (e.g., data analysis, machine learning).¹¹³
 - *Increase opportunities for lateral entry at higher levels, particularly in fields that require strong technical expertise.* The U.S. military might consider directly commissioning civilians with valuable skillsets and experience for entry at higher levels and/or adjusting training requirements for those looking to commission into certain specialties.
 - *Improve the quality of training, services, and healthcare for female servicemembers.* The U.S. military should recognize the value of integrated training and expectations throughout all services and all elements of training.¹¹⁴ The Department of Defense must ensure that women have equal access to appropriate equipment and medical attention throughout their careers.¹¹⁵
- *Implement training, education, and incentives to improve proficiency and readiness in computer science, big data analytics, and machine learning.* The transformation that is being catalyzed by today's emerging technologies renders talent and technical readiness more vital than ever. The Computer Language Initiative that the Air Force has launched is an excellent example that illustrates how relatively straightforward modifications to existing policies can facilitate the identification and leveraging of the skillsets of current personnel, while creating incentives for the development and sustainment of such skills.¹¹⁶ The Department of Defense should evaluate the initial track record of this program and then formulate recommendations as to whether it ought to be scaled up and expanded to other services.
- *Target recruiting to new demographics, and adapt messaging to appeal to those who may not initially consider service.* For the U.S. military to draw upon a more diverse and representative population,

recruiting must continue to expand to new regions and localities, while also reaching those who do not have direct exposure to or awareness of the opportunities of military service.¹¹⁷ Indeed, recruiting should concentrate on informing and appealing to those who may not otherwise consider military service in the first place,¹¹⁸ including through exploring more creative and targeted messaging.¹¹⁹

- In particular, recruiting should concentrate on new options for outreach to women. For example, the U.S. Air Force's engagement with the movie *Captain Marvel* is a great example of a story that might contribute to inspiring and raising awareness of the option of military service among women.¹²⁰ The U.S. military also ought to do more to highlight the real-life stories of women who have made invaluable contributions in military service throughout our nation's history.¹²¹
- *Reform the process for military medical waivers, and consider enabling greater flexibility in requirements for certain priority specialties.* Today, 71% of Americans aged 17 to 24 are estimated to be disqualified for military service, by some estimates.¹²² This statistic reflects serious issues in our education and healthcare systems, highlighting that inequality and disparities of opportunity should be considered a major national security challenge. At the same time, this high rate of disqualification can also reflect unfortunate idiosyncrasies in the current military medical accessions process. For instance, those seeking to join the military can often be prevented from doing so by minor issues in their medical history that may have no clear bearing upon their capacity service, but can add major complications or prove outright disqualifying.¹²³ While it is encouraging to see recent progress in services starting to update policies that may be outdated,¹²⁴ there are reasons to argue that the process for receiving medical waivers still could require major reforms. For instance, such changes might include a full review of all of the medical conditions that are currently included on the list, removing those that are now easily treatable and manageable and/or new options for automatic granting of waivers of medical conditions that are relatively irrelevant to certain occupational specialties in which there are shortfalls or priority requirements.
 - *Create new options and pathways to service for those who are currently excluded and disqualified for reasons of physical or mental health.* The U.S. military should explore new options to welcome the talent and skills of people with certain conditions or disabilities, including, for instance, those with those with high functioning autism or Asperger syndrome.¹²⁵ For instance, the Israeli military, has a unit involved in signals and imagery intelligence for which it recruits specifically those with unique cognitive characteristics, including Asperger's, which may reflect a model worth considering for the U.S. military.¹²⁶
- *Persist in reforming the security clearance process for the national security community as a whole.* The current backlogs and dysfunctionality of the process of receiving a high-level security clearance for military service or government employment may be driving away too many people who initially pursue opportunities for service.¹²⁷ Considering the massive numbers of those who have been stuck in limbo this backlog, which peaked at 725,000 in early 2018, it is hardly surprising that a certain proportion tend to drop out of the processing.¹²⁸ In some respects, the process itself is outdated and does not readily accommodate the realities of a globalized world. Current efforts to improve and streamline the process of receiving a security clearance should be prioritized, including the exploration of options to leverage improved data analytics and artificial intelligence

to expedite the process,¹²⁹ while also introducing safeguards against the risks of bias or algorithmic distortion in the application of these new techniques to workforce management.

- *Reverse the policy of banning transgender personnel from service.* The current policy excluding transgender personnel is not only is morally wrong, but also wrongly deprives the U.S. military of their talents and dedication to service. All of the studies and evidence available indicate that the expense of providing the necessary medical treatment to transgender servicemembers is negligible, relative to other major health expenditures.¹³⁰ On the other hand, the loss and costs to morale and readiness from excluding those who have valuable training and experience, as well as critical skillsets, may prove far greater.¹³¹ The implementation of this policy is denying those who are dedicated and inspired to serve the opportunity to do so.¹³² Potentially, this policy, which reflects a sad step backwards away from a path towards greater inclusion, may also have negative externalities for recruiting. This ban should be reversed, and transgender personnel who have been discharged or prevented from commissioning pursuant to this policy should receive appropriate compensation and the opportunity to serve.
- *Revive and strengthen the Military Accessions Vital to National Interest (MAVNI) program.* The future of the Military Accessions Vital to National Interest (MAVNI) program—and that of its recruits—is presently in peril. The MAVNI program was initially established in 2008 to allow for recruiting of personnel with particular technical, linguistic, and cultural proficiencies that are recognized as critical to national security and interest. MAVNI has been lauded as highly successful, involving over 10,400 recruits,¹³³ and this initiative continues the long history and tradition of immigrants serving with honor in the U.S. military.¹³⁴ The discontinuation and disruption of the program starting around 2017 appears to have been undertaken in a manner that risks placing many MAVNI recruits in grave danger, while wasting their potential contributions.¹³⁵ In some cases, MAVNIs have even faced deportation, which could result in real danger of imprisonment or even a death sentence upon return to their countries of citizenship.¹³⁶ MAVNI should be revitalized and reinvigorated, including with improved and expedited screening of recruits for security purposes. The Department of Defense also should consider expanding this program further going forward, particularly to facilitate recruitment of those with valuable technical skillsets. American national defense can and should be strengthened by our continued welcome to all those who love this country and are inspired to serve it.
 - *Cease any ongoing deportation proceedings involving MAVNI recruits, and grant asylum to all MAVNI recruits whose data has been leaked in ways that may place them in grave danger.* For thousands of MAVNI recruits, there is a high probability that their names may now be in the hands of foreign governments and intelligence after a data leak that could have tragic consequences.¹³⁷ All of the MAVNI recruits whose personal information has been exposed through this incident ought to be granted asylum and/or temporary protected status immediately.¹³⁸
 - *Conduct an independent assessment of any apparent failures of security clearance processing, including potential concerns of counterintelligence.* To date, there has been one known case in which a recruit to the MAVNI program was acting on behalf of a foreign intelligence service, China's Ministry of State Security.¹³⁹ Such concerns should not be taken lightly, but countermeasures undertaken for appropriate mitigation should not damage the overall viability of the program. It is not unlikely that there are other cases in which such targeting and/or recruitment could have occurred, but that risk is not a reason to

- discontinue a program that can be a critical channel through which to recruit future Americans whose skills, expertise, and patriotism could be critical to our future force.
- *Provide a pathway to citizenship for the families of MAVNI participants.* For the MAVNI program to be a viable for the long term, the U.S. government might consider providing an expedited pathway to citizenship for the immediate family members of recruits to the program, such as granting them green cards to facilitate rapid relocation, thus eliminating a potential source of leverage that foreign governments could use otherwise to target or exploit participants.
 - *Recognize the strategic imperative of sustaining American innovation and our competitiveness in science and technology.* Today, the economic and technological competition between China and the United States is at the heart of this great power rivalry. American mobilization for peacetime competition is equally imperative, which will require pursuing our own ‘national rejuvenation’ through reinvesting in such core priorities as science, education, and digital and physical infrastructure. For its part, the Department of Defense should increase and sustain funding for basic and applied research and support the expansion of scholarship programs in priority STEM disciplines.

Reading Recommendations

The Technology and National Security Program at the Center for a New American Security is pursuing an active research agenda on issues that may be relevant to the Commission, including an ongoing project on Artificial Intelligence and Global Security.

- Elsa Kania, “Battlefield Singularity: Artificial Intelligence, Military Revolution, and China’s Future Military Power,” Center for a New American Security, November 28, 2017, <https://www.cnas.org/publications/reports/battlefield-singularity-artificial-intelligence-military-revolution-and-chinas-future-military-power>
- Michael Horowitz, Elsa Kania, Gregory Allen, and Paul Scharre, “Strategic Competition in an Era of Artificial Intelligence,” Center for a New American Security, July 25, 2018, <https://www.cnas.org/publications/reports/strategic-competition-in-an-era-of-artificial-intelligence>
- Elsa Kania, “China’s Threat to American Government and Private Sector Research and Innovation Leadership,” Testimony before the House Permanent Select Committee on Intelligence, July 19, 2018, <https://www.cnas.org/publications/congressional-testimony/testimony-before-the-house-permanent-select-committee-on-intelligence>.
- Elsa B. Kania and John K. Costello, “Quantum Hegemony? – China’s Ambitions and the Challenge to U.S. Innovation Leadership,” Center for a New American Security, September 12, 2018, <https://www.cnas.org/publications/reports/quantum-hegemony>

The Future of the U.S. Military:

The Military, Veterans, and Security Program at the Center for a New American Security has produced and will be continuing to launch a number of high-impact reports on critical issues involving human capital issues in the military, including:

- Andrew Swick and Emma Moore, “The (Mostly) Good News on Women in Combat,” Center for a New American Security, April 19, 2018, <https://www.cnas.org/publications/reports/an-update-on-the-status-of-women-in-combat>
- Phillip Carter, Katherine Kidder, Amy Schafer, and Andrew Swick, “AVF 4.0: The Future of the All-Volunteer Force,” Center for a New American Security, March 28, 2017, <https://www.cnas.org/publications/reports/avf-4-0-the-future-of-the-all-volunteer-force>
- Emma Moore and Andrew Swick, “Leveraging ROTC to Span the Civil-Military Gap,” Center for a New American Security, September 27, 2018, <https://www.cnas.org/publications/reports/working-paper-leveraging-rotc-to-span-the-civil-military-gap>

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Currently, Elsa is a PhD student in Harvard University's Department of Government, and she is also a graduate of Harvard College (*summa cum laude*, Phi Beta Kappa). Her thesis was awarded the James Gordon Bennett Prize, and her dissertation will examine Chinese military learning and innovation in historical perspective. Her prior professional experience includes time with FireEye, the Department of Defense, Long Term Strategy Group, and the Carnegie-Tsinghua Center for Global Policy. While at Harvard, she has also worked as a research assistant at the Belfer Center and the Weatherhead Center. Elsa was a Boren Scholar in Beijing, China, and she has professional proficiency in Mandarin Chinese.

Notes

¹ Please note that this discussion of relevant dimensions of Chinese military modernization is far from a comprehensive assessment and is included to highlight certain issues that may be of concern or particular relevance to the Commission, including in order to provide more of a robust basis for comparison.

² For one perspective in the debate on China's core interests, see: Michael Swain, "China's assertive behavior part one: on 'core interests,'" *China Leadership Monitor*, No. 34, 22 February 2011." (2016): 7.

³ Phillip C. Saunders and Joel Wuthnow, "Chinas Goldwater-Nichols Assessing PLA Organizational Reforms," National Defense University, 2016.

⁴ Michael S. Chase and Cristina L. Garafola, "China's Search for a 'Strategic Air Force'" *Journal of Strategic Studies* 39, no. 1 (2016): 4-28.

⁵ For context and notable analyses, see the following pieces, among others: Michael S. Chase, "PLA Rocket Force Modernization and China's Military Reforms," Testimony presented before the U.S.-China Economic and Security Review Commission on February 15, 2018, https://www.uscc.gov/sites/default/files/Chase_Written%20Testimony.pdf. Lyle Goldstein, "The US-China Naval Balance in the Asia-Pacific: An Overview," *The China Quarterly* 232 (2017): 904-931.

⁶ Liu Wei (刘伟) (ed.), Theater Command Joint Operations Command (战区联合作战指挥), National Defense University Press (国防大学出版社), 2016.

⁷ Strategic Support Force: Forging the Iron Fist of New-Type Combat Forces" [战略支援部队：锻造新型作战力量的尖刀铁拳], Xinhua, June 05, 2017, <http://military.people.com.cn/n1/2017/0605/c1011-29317562.html>

⁸ Xi Jinping Attended Central Military Commission's Military Work Conference and Delivered an Important Speech" [习近平出席中央军委军事工作会议并发表重要讲话], Xinhua, January 4, 2019, http://www.gov.cn/xinwen/2019-01/04/content_5354931.htm.

⁹ John Costello and Joe McReynolds. *China's Strategic Support Force: A Force for a New Era*. Washington, DC: National Defense University Press, 2018.

¹⁰ Elsa Kania and John Costello, "The Strategic Support Force and the Future of Chinese Information Operations," *Cyber Defense Review*, Summer 2018, https://cyberdefensereview.army.mil/Portals/6/Documents/CDR_Journal_Articles/The_Strategic_Support_Force_Kania_Costello.pdf?ver=2018-07-31-093713-580

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¹² For a more detailed assessment of how the PLA may wage 'systems confrontation and destruction' in warfare, see: Jeffrey Engstrom, "Systems Confrontation and System Destruction Warfare," RR1708, *Rand Corporation*, 2018.

¹³ The Strategic Support Force Eastern Base leaders came to our institute to inspect and train non-commissioned officers" [战略支援部队东部基地领导来我院调研定向培养士官工作], August 9, 2018, <http://www.wspc.edu.cn/info/1002/8532.htm>

¹⁴ "Notice on Calling for the Science and Technology Achievements Exhibition Project of 'Frontier Science and Technology Entering the Military Camp - Into the Strategic Support Force Information and Communication Base'" [关于征集“前沿科技进军营—走进战略支援部队信息通信基地”科技成果展项目的通知], March 11, 2019, http://webcache.googleusercontent.com/search?q=cache:fjsjwmi0ZtUJ:www.sohu.com/a/300466797_358040+&cd=7&hl=en&ct=clnk&gl=us

¹⁵ For recent sourcing discussing the PLASSF 311 Base's engagement with concerns of innovation in political work for the cyber era, see: "Working hard to Promote the Innovative Development of Political Work" [努力推动政治工作创新发展], China Military Network, April 23, 2019,

https://web.archive.org/web/20190423033915/http://www.81.cn/2018hldk/2018-10/30/content_9326217.htm

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- ²⁷ “Lt. Gen. Liu Guozhi: the development of military intelligentization is a strategic opportunity for our military to turn sharply to surpass” [刘国治中将:军事智能化发展是我军弯道超车的战略机遇], CCTV News, October 22, 2017.
- ²⁸ Pang Hongliang [庞宏亮], “The Intelligentization Military Revolution Starts to Dawn” [智能化军事革命曙光初现], *PLA Daily*, January 28, 2016, http://www.mod.gov.cn/wqzb/2016-01/28/content_4637961.htm.
- ²⁹ See: Lora Saalman, “China’s Integration of Neural Networks into Hypersonic Glide Vehicles,” in “AI, China, Russia, and the Global Order: Technological, Political, Global, and Creative Perspectives,” A Strategic Multilayer Assessment (SMA) Periodic Publication, December 2018, https://nsiteam.com/social/wp-content/uploads/2019/02/AI-China-Russia-Global-WP_FINAL.pdf
- ³⁰ “Academy of Military Science National Defense Science and Technology Innovation Research Institute – Exploring the “Matrix” Research Model to Enhance Innovation Capability” [军事科学院国防科技创新研究院——探索“矩阵式”科研模式提升创新能力], April 2, 2018. “Academy of Military Science National Defense Science and Technology Innovation Research Institute Has Taken Measures to Gather Top Talents” [军科院国防科技创新研究院多措并举集聚顶尖人才], China Military Network, February 4, 2018, http://webcache.googleusercontent.com/search?q=cache:WDwIAWmc6agJ:www.81.cn/jwgz/2018-02/04/content_7931564.htm+&cd=8&hl=en&ct=clnk&gl=us
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- ³² Lu Zhisheng [陆知胜], “The Typical Style of Intelligentized Operations: Human-Machine Cooperation!” [智能化作战的典型方式：人机协同！] *PLA Daily*, October 17, 2018.
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